DZALAYEV, M.I.

AID P - 694

Subject : USSR/Electricity

Card 1/1 Pub. 29 - 5/18

Authors : Gorbunov, N. A., Eng. and Dzalayev, M. I., Eng.

Title : Automatic control of water heaters for district heating

Periodical : Energetik, 8, 13-15, Ag 1954

Abstract : The author gives a brief description of the control equipment with an explanation of the functioning of the whole installation. One diagram.

Institution : None

Submitted : No date

DZALAYEV, M. I.

AID P - 711

Subject : USSR/Electricity

Card 1/1 Pub. 29 - 4/26

Authors : Dzalayev, M. I., Eng. and Korniyenko, M. S., Mechanic

Title : Reconstruction of coal conveyor units

Periodical : Energetik, 9, 9-11, S 1954

Abstract : The author describes details of reconstruction of scraper conveyors at an electric power station which was expanded. 4 diagrams.

Institution : None

Submitted : No date

DZALAYEV, M. I.

AID P - 2417

Subject : USSR/Electricity

Card 1/1 Pub. 26 - 16/33

Authors : Gorbunov, N. A. and Dzalayev, M. I.

Title : Simplification and increase in the reliability of automatic equipment controlling heat processes

Periodical : Elek sta 5, 48-49, My 1955

Abstract : The article describes the operation of 220 v reversible switches, which after a re-winding of the coil worked for a 380 v a-c current. One photo, two diagrams.

Institution: None

Submitted : No date

AID P - 3074

Subject : USSR/Electricity

Card 1/1 Pub. 29 - 8/29

Author : Dzalayev, M. I., Eng.

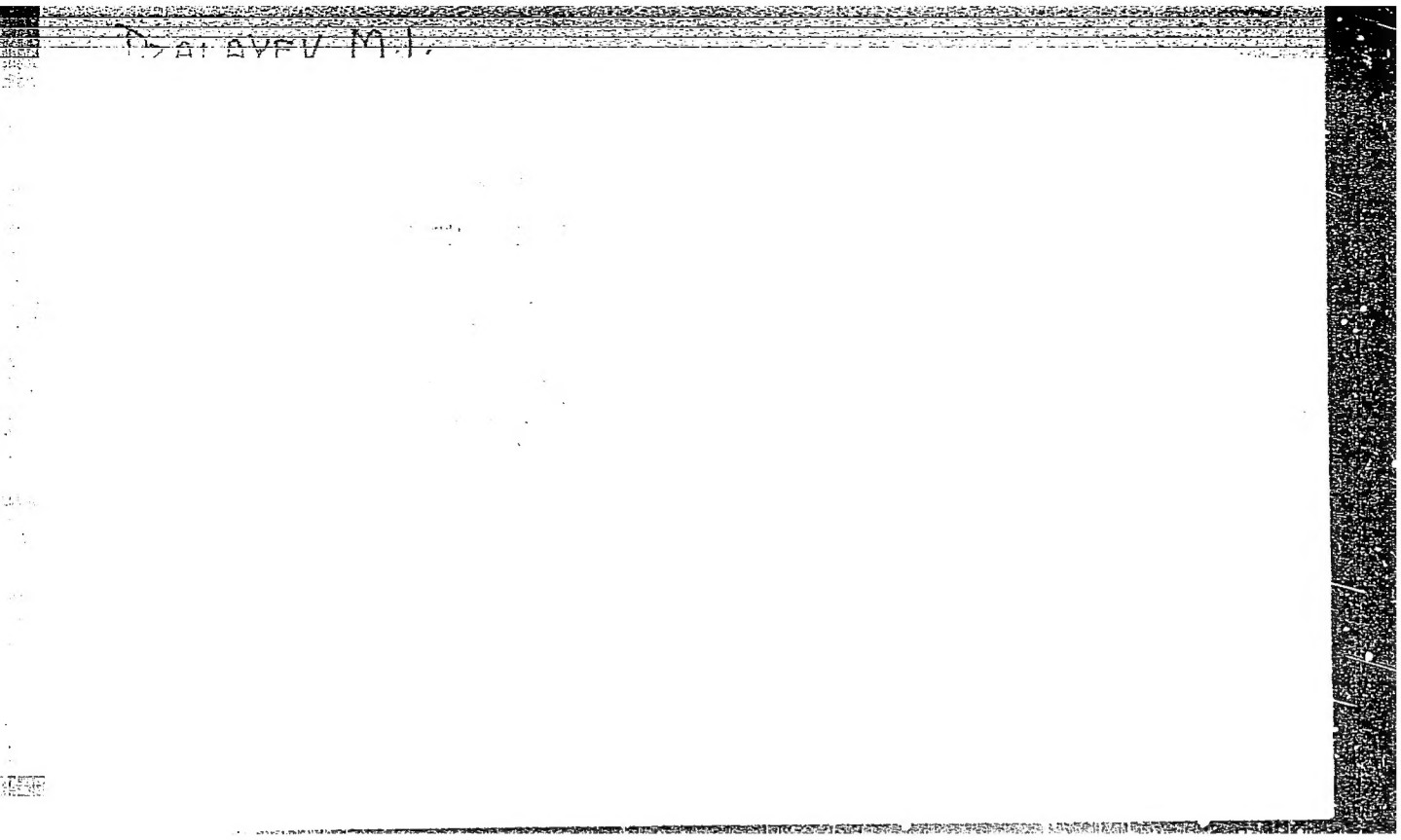
Title : Repairing separate units of a turbine

Periodical : Energetik, 7, 13-15, Jl 1955

Abstract : The author describes a general overhauling of a 24,000-kw Brown-Boveri turbine at a power station. Four drawings.

Institution : None

Submitted : No date



SOV/91-58-2-20/31

AUTHOR: Dzalayev, M.I., Engineer

TITLE: The Deflection of the Steam-Turbine Shaft (Progib vala parovoy turbiny)

PERIODICAL: Energetik, 1958, Nr 2, p 27-29 (USSR)

ABSTRACT: The turbine described is an AEG active, condensation, 2-cylinder turbine having 47,000 kW capacity, 1,500 r.p.m., working at 35 atm and 435°C. After 3 months of running, a 0.6 mm deflection of the high-pressure rotor shaft, as well as other irregularities, was noticed. Shaft deflection was also detected in another AEG turbine having 50,000 kW capacity and working at 29 atm and 400°C. Several factors are assumed to be the cause of the trouble (short circuit in the generator circuitry; imperfect screwing of the bearing stop-bolts;

Card 1/2

The Deflection of the Steam-Turbine Shaft

insufficient steam supply at the sealings), but the essential cause seems to be the fact that the set of regulation valves is placed only on one side of the turbine and that the cylinder is not firmly enough fastened with key bolts. The author recommends reconstructing the end labyrinth sealings of the turbines' cylinders, especially of the front cylinder.

Card 2/2

DZALAYEV, M.I., inzh.; MIKHAL'KOV, P.V., inzh.

Determining the specific weight of natural gas according to the calorific value. Teploenergetika 9 no.5:88-89 My '62.
(MIRA 15:4)

(Natural gas--Testing)

DZALAYEV, M.I., inzh.; PRAVDIKOV, V.N., inzh.

Comparative test of two types of gas releasing nozzles for pulverized coal and gas burners. Elek. sta. 33 no.5:83-85 My '62. (MIRA 15:7)

(Boilers--Equipment and supplies)
(Furnaces)

DZALAYEV, M.I., inzh.; PRAVDIKOV, V.N., inzh.

Simplification of methodology of the State Trust for the Organization and Efficiency of Electric Power Plants for determining the draw-in of boiler combustion chambers. Elek. sta. 35 no.6:9-11 Je '64. (MIRA 18:1)

DZALAYEV, M.I., inzh.; PRAVDIKOV, V.N., inzh.

Effect of the placement of gas conduits on the operation of exhaust pumps of TGM-84 boilers. Elek. sta. 35 no.9:83-84 S '64.
(MIRA 18:1)

BELITSKIY, Mikhail Ivanovich, Geroy Sotsialisticheskogo Truda, brigadir brigady rabochikh ochistnogo zaboya; KRONK, Leonkhard Antonovich, Geroy Sotsialisticheskogo Truda, pomoshchnik mastera; DZAMASHVILI, Archil Vasil'yevich, Geroy Sotsialisticheskogo Truda, deputat Verkhovnogo Soveta GruzSSR, master domennogo tsekha; TISHEYEV, Saydulla, Geroy Sotsialisticheskogo Truda, plavil'shchik; REZNIKOV, Aleksey L'vovich, Geroy Sotsialisticheskogo Truda, master.

We will achieve the triumph of communist labor. Okhr. truda i sots. strakh. 3 no.7:5-12 Jl '60. (MIRA 13:8)

1. Shakhta imeni Lenina tresta Nesvetayantratsit," Rostovskoy oblasti (for Belitskiy). 2. Starotkatskaya fabrika ordena Lenina kombinata "Krengol'mskaya manufaktura" Estonskoy SSSR (for Kronk). 3. Zakavkazskiy metallurgicheskiy zavod imeni Stalina (for Dzamashvili). 4. Kadamzhayskiy metallurgicheskiy zavod Yuzhnogo gornometallurgicheskogo kombinata imeni Frunze, Kirgizskoy SSR (for Tisheyev). 5. Neftepromyslovoye upravleniye "Nebitdagneft'" Turkmenskoy SSR (for Reznikov).
(Technological innovations) (Industrial hygiene)

KASHAKASHVILI, N.V.; GLADKOSKOK, P.P.; KHOSHTARIYA, Sh.F.; MINDELI, M.Sh.
Prinimali uchastiye: PARASTASHVILI, V.V.; KOBERIDZE, V.G.; CHKHEIDZE, Z.A.; RUKHADZE, E.A.; KENKEBASHVILI, O.A.; SHARASHIDZE, S. Sh.; GOGISHVILI, A.G.; MELKADZE, N.V.; DZAMASHVILI, A.V.; GORDEZIANI, N.N.; ABRAMISHVILI, R.N.

Performance of Transcaucasia Metallurgical Plant blast furnaces operating on natural gas. Trudy GPI [Gruz.] no.4:11-23 '62 (MIRA 17:8)

DZAMASHVILI, N.

Safety engineering in iron and steel mills. Sots.trud no.2:134-135 F '57. (MLRA 10:5)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut okhrany truda imeni S.M.Kirova.

(Industrial safety)

DZAMASHVILI, N., kand.tekhn.nauk (Tbilisi)

A new device. Okhr.truda i sots.strakh. no.1:74 Ja '59.
(MIRA 12:2)

(Spraying and dusting equipment)

DZAMBAS, Duzan, Dr.

Toxic reactions of the heart during emetine therapy of amebic dysentery. Lijec vjes 82 no.7/8:609-616 '60.

1. Iz Interne klinike Medicinskog fakulteta u Zagrebu
(EMETINE toxicol)
(HEART DISEASES etiol)
(DYSENTERY AMEBIC ther)

DZAMBASOVIC, Dusan; MIHAJLOVIC, Vera

Our experience with endotracheal anesthesia in laryngectomy. Srpski arh. celok. lek. 93 no.2:198-203 F '65.

1. Otorinolaringolosko odeljenje Zeljeznicke bolnice u Beogradu (Nacelnik: dr. Dragutin Mandic); Odsek za anesteziju i reanimaciju Zeljeznicke bolnice u Beogradu (Sef: dr. Vera Mihajlovic).

DZAMIC, Milomir, dr, docent (Novi Beograd, soliter A3, ulaz 2/19)

Chemical and technological properties of crab apple.
Tehnika Jug 17 no.5:Suppl.: Prehran ind 16 no.5:965-970
My '62.

1. Poljoprivredni fakultet Univerziteta u Beogradu.

L 22208-66

ACC NR: AT5024237 SOURCE CODE: UR/3167/65/014/000/0181/0198

AUTHOR: Mikeladze, A. L., Dzamoyeva, E. I. 16 B+1

ORG: none

TITLE: Some data on the structural organization of microglia

SOURCE: AN GruzSSR. Institut fiziologii, Trudy, v. 14, 1965. Sovremennyye problemy deyatel'nosti i stroyeniya tsentral'noy nervnoy sistemy (Present problems of the activity and structure of the central nervous system), 181-198

TOPIC TAGS: CNS histology, microglia, glial cell, microgliocyte, sympathetic nervous system, central nervous system

ABSTRACT: A special histological study was made of brain and spinal cord tissue from macacus rhesus monkeys and cats, which were also compared anatomically with the brain and spinal cord of guinea pigs and man. The results confirm existing notions of the structure of neuroglia, and supply new data on the organization and architectonics of microglia. Microglia were found to be the most highly developed in the cerebral cortex, cerebellum, and corpora quadrigemina. The structure of microgliocytes in the spinal cord and subcortical ganglia is less complex. Microglia tend to concentrate in areas where the capillary net is best

Card 1/2

L 22208-66

ACC NR: AT5024237 O

developed (3d, 4th, and 5th layers of the cerebral cortex). Microgliocytes are evenly distributed in the cortical and subcortical ganglia. Each microgliocyte has branches connecting it independently with individual neurons and other glial cells, and with the capillary net. The microgliocytes of vegetative nuclei (the hypothalamus, lateral sympathetic nucleus, Edinger-Westphal nucleus, etc.) are different from those located in other parts of the brain. Vegetative nucleus microglia are small, simple in structure, and densely concentrated. These microglia are often directly contiguous to neurons and blood vessels. The method used to detect microglia suggests that their nucleic acids are more resistant to denaturation than those of neurons. [DP]

SUB CODE: 06/ SUBM DATE: none/ OTH REF: 033/ SOV REF: 026

Card 2/2 nst

Dzampov, B.V.

AID P - 4798

Subject : USSR/Engineering

Card 1/2 Pub. 110-a - 1/17

Authors : Vukalovich, M. P., Prof., Dr. Tech. Sci., and B. V. Dzampov, Eng.

Title : Standardization of the thermodynamic properties of water and steam.

Periodical : Teploenergetika, 7, 3-6, Jl 1956

Abstract : A method is presented which was developed by the Moscow Institute of Power Engineering (MEI) for use in compiling tables on the thermodyanmic properties of water and steam. The tables used now in the USSR are unsatisfactory because they describe the pressures and temperatures of water and steam not higher than 300 atmospheres and 700°C. The new preliminary MEI tables present the temperature range from 450 to 1000°C and the pressure range from 100 to 650 atmospheres. These tables are based on the extensive and precise experimental data on caloric values obtained recently in the MEI and VTI (All-Union Heat Engineering

AID P - 4798

Teploenergetika, 7, 3-6, Jl 1956

Card 2/2 Pub. 110-a - 1/17

Institute), as well as on the theory of imperfect gases, particularly of steam. After the All-Union Conference on these problems (proposed for 1957) standard State tables will be compiled and published covering the temperatures of water and steam up to 1000°C, and of pressures up to 650 atm. Tables. 3 Russian references.

Institution : Moscow Institute of Power Engineering

Submitted : No date

Dzampov, B. V. Cand Tech Sci -- (diss) "~~The~~ Equation of the State of ~~For~~ Water Vapor up to 1,000 kilograms/~~square centimeter~~ cm^2 and 1,000°C." Mos, 1957. 15 pp, 2 sheets of tables, 20 cm. (Min of Higher Education USSR, Mos Order of Lenin Power Engineering Inst im V. M. Molotov), 100 copies (KL, ~~25-57~~ 25-57, 112)

DZAMPOV, B.V.,

96-4-8/24

AUTHORS: Vukalovich, M.P., Dr. Tech.Sc. and Dzampov, B. V., Cand.Tech.Sc.

TITLE: Equations of state, thermo-dynamic functions and tables of reference points for water and super-heated steam up to 1000 atms and 1000°C. (Uravneniye sostoyaniya, termodinamicheskiye funktsii i tablitsy opornykh tochek dlya vody i peregretogo vodyanogo para do 1000 ata i 1000°C).

PERIODICAL: Teploenergetika, 1958, . . No.4, pp. 46-52 (USSR).

ABSTRACT: In an earlier work the authors proposed an equation of state to facilitate the preparation of steam tables. The earlier article gave results of preliminary calculations of thermal and calorific magnitudes derived from the equation of state over the pressure range of 100 - 650 atmospheres and the temperature range of 450 - 1000°C. Work done since the publication of that article made it possible to considerably extend the range of applicability of the equation of state and to make it somewhat more simple and accurate. At present the equation gives satisfactory agreement with experiment up to a pressure of 1000 atmospheres. The equation is then given. It is comparatively simple and can be used to calculate

Card 1/4

Equations of state, thermo-dynamic functions and tables of reference points for water and super-heated steam up to 1000 atms and 1000°C.

tables of the thermo-dynamic properties of water and steam, also to construct i - s, and T - s diagrams. The physical concept of interaction between molecules, which is the basis of the equation, and the very accurate experimental data used to determine the constants that enter into the equation, make it reliable for purposes of extrapolation. To check it against experimental results, calculations were made at pressures up to 1000 atmospheres in the temperature range 400-650°C, where reliable experimental data already exist. The results of the comparison are given in Table 1. As will be seen, up to a temperature of 500°C, the difference between calculated and measured values does not exceed 0.5%, and the average difference is about 0.12%. In the sub-critical range below 400°C the differences are greater, and reach 2%. This is also to be expected along the saturation curve. The comparison shows that agreement between calculated and experimental values is satisfactory at temperatures above 420°C, since the differences are within the limits of experimental error. By employing the equation of state for steam, and the

Equations of state, thermo-dynamic functions and tables of reference points for water and super-heated steam up to 1000 atms and 1000°C.

differential equations of thermo-dynamics, the authors obtained analytical expressions for thermo-dynamic functions and made calculations to check the formulae derived. The equation of state is first used to derive an expression for the enthalpy. This is compared with experimental data in Table 2, with satisfactory agreement. Expressions are then derived for the entropy and internal energy. The authors, using the equation of state and the existing Moscow Power Institute Tables of the thermo-dynamic properties of water and steam at pressures up to 300 atmospheres and temperatures up to 700°C, drew up tables of reference values of specific volumes, enthalpy and entropy for the pressure range 1 - 1000 atmospheres and the temperature range 0 - 1000°C. The results of the work are entered in Table 3; values are given every 50°C. Analysis of the reference values shows that they are suitable for the formulation of detailed tables within the stated range of pressure and temperature. Moreover, the table of reference-points is itself useful for a

 number of thermal calculations and for the construction

96-4-8/24

Equations of state, thermo-dynamic functions and tables of reference points for water and super-heated steam up to 1000 atms and 1000°C.

of i - s and T - s diagrams.
There are 3 tables and 11 references - 10 Russian, 1 Hungarian.

ASSOCIATION: Moscow Power Institute.
(Moskovskiy Energeticheskiy Institut).

AVAILABLE: Library of Congress.

Card 4/4

SOV/96-60-1-14/22

24,5200

AUTHORS: Vukalovich, M. P., Doctor of Technical Sciences, and Dzampov, B. V., and Zubarev, V. N., Candidates of Technical Sciences

TITLE: Tables of the Thermal-physical Properties of Ammonia

PERIODICAL: Teploenergetika, 1960, Nr 1, pp 63-69 (USSR)

ABSTRACT: Extensive use is now being made of ammonia as a heat-transfer medium, but adequate tables of its thermal physical properties are not available. Accordingly, the authors decided to study, analyse and select the most reliable experimental and calculated data on the properties of ammonia and to work out the tables given in this article. The tables of pressure, volume and temperature cover the range of 40 - 290°C; those of specific heat at constant pressure are for the range 40 - 280°C; and the viscosity tables cover from 30 - 250°C. The pressure range is 1 - 800 kg/cm^2 in all cases. International published work on the properties of ammonia is critically reviewed and the best is used in formulation of the tables. Table 1 gives values of the specific volume of ammonia for temperatures up to 290°C; available values for higher temperatures were not

Card 1/2

Tables of the Thermal-physical Properties of Ammonia

used because there is evidence of decomposition of ammonia above 290°C. The values tabulated were obtained by calculation and graphical methods. There is satisfactory agreement with other authors and differences do not exceed 0.2 - 0.3%. Work done on the specific heat at constant pressure is reviewed. Values were calculated or determined graphically and the results are plotted in Fig 2. It was considered that the errors in this table may be 2 - 3%, and on the 150°C isotherm at pressures of 100 - 150 kg/cm^2 they may be somewhat greater. The properties of ammonia on the saturation line have been studied by several authors but the data remain inadequate; the thermo-dynamic properties of ammonia on the saturation line from temperatures of - 70 to + 132.4°C are given in Table 3. Work on the viscosity of ammonia is reviewed and values are given in Table 4. It is considered that the values in this table are accurate and reliable up to 250°C and 800 kg/cm^2. There are 1 figure, 4 tables and 13 references, 4 of which are Soviet, 8 English and 1 German.

ASSOCIATION: Moskovskiy energeticheskiy institut (Moscow Power Institute)

VUKALOVICH, M.P., doktor tekhn.nauk; DZAMPOV, B.V., kand.tekhn.nauk; ZUBAREV, V.N., kand.tekhn.nauk

Thermodynamic properties of a 96 percent (by volume) solution of ethyl alcohol in water. Teploenergetika 7 no.2:70-77 F '60. (MIRA 13:5)

1. Moskovskiy energeticheskiy institut.
(Ethyl alcohol--Thermal properties)

VUKALOVICH, M.P., doktor tekhn.nauk; IZAMPOV, B.V., kand.tekhn. nauk; RASSKAZOV, D.S., kand.tekhn.nauk; REMIZOV, S.A. inzh.

Thermal properties of water under pressures up to 1200 kg/cm^2 and at temperatures up to 300°C. Teploenergetika 7 no.7:4-12 Jl '60. (MIRA 13:7)

1. Moskovskiy energeticheskiy institut.
(Water--Thermal properties)

VUKALOVICH, M.P., doktor tekhn.nauk; ZUBAREV, V.N., kand.tekhn.nauk;
DZAMPOV, B.V., kand.tekhn.nauk

Calorific properties of the 96 per cent (by volume) ethyl alcohol water solution. Teploenergetika 7 no.10:63-67 O '60. (MIRA 14:9)

1. Moskovskiy energeticheskiy institut.
(Ethyl alcohol)

VUKALOVICH, M.P., doktor tekhn.nauk; DZAMPOV, B.V., kand.tekhn.nauk; RASSKAZOV, D.S., kand.tekhn.nauk; REMIZOV, S.A., inzh.

Tables of Cp heat capacity of water and water vapor. Teploenergetika 8 no.12:70-77 D '61. (MIRA 14:12)

1. Moskovskiy energeticheskiy institut.
(Heat--Tables)

ANDRIANOVA, Tamara Nikolayevna; DZAMPOV, Boris Vasil'yevich; ZUBAREV, Vladimir Nikolayevich; REMIZOV, Serafim Aleksandrovich; VUKALOVICH, M.P., prof., red.; SINEL'NIKOVA, L.N., red.; BUL'DYAYEV, N.A., tekhn. red.

[Problems in industrial thermodynamics] Sbornik zadach po tekhnicheskoi termodinamike. [By] T.N.Andrianova i dr. Moskva, Izd-vo "Energiia," 1964. 199 p. (MIRA 17:3)

MIKELADZE, A.I.; DZAMOYEVA, E.I.

Some data on the structural organization of microglia. Trudy Inst. fiziol. AN Gruz. SSR 14:181-198 '65. (MIRA 18:10)

TSIKUNOV, M., polkovnik; DZAMUKOV, A., mayor

Special tactical exercises. Voen.vest.40 no.10:65-67 O '60. (MIRA 14:5)

(Tactics--Problems, exercises, etc.)

DZANAGOV, Kh. B.

DZANAGOV, Kh. B. "The Outlook for Increasing the Milk Productivity of Mountain Cattle in the North-Ossetian ASSR." Min Higher Education. Leningrad Agricultural Inst. Leningrad, 1955. (Dissertation for the Degree of Doctor in Agricultural Science)

So: Knizhnaya Letopis', No. 19, 1956.

Name: DZANAGOV, Khasanbek Bakhoyevich

Dissertation: Prospects for raising the milk productivity of mountain cattle in the North-Ossetian ASSR

Degree: Doc Agr Sci

Affiliation: North-Ossetian Agr Inst

Defense Date, Place: 17 Apr 56, Council of Leningrad Agr Inst

Certification Date: 20 Apr 57

Source: BMVO 14/57

USSR / Farm Animals. Cattle. Q

Abs Jour : Ref Zhur - Biologiya, No 5, 1959, No. 21242

Author : Dzanagov, Kh. B.
Inst : North-Osetia Institute of Agriculture
Title : Physiological Indicators in Mountain Cows

Orig Pub : Tr. Sev. Osetinsk. s.-kh. in-ta, 1957, 109-134

Abstract : The changes of gas and energy metabolism in mountain and submontane regions during the various stages of lactation and at different seasons of the year and times of the day were investigated and described in cows of the aboriginal mountain cattle; also, the changes of the blood's characteristics, of respiration and pulse rate which take place at the submontane part of Severo-Osetinskaya ASSR (North-Osetia Socialist Republic). It was observed that the body temperature and the Hb percentage did not show essential differences

Card 1/2

USSR / Farm Animals. Cattle. Q

Abs Jour : Ref Zhur - Biologiya, No 5, 1959, No. 21242

in cows that were transferred from mountain to lowland regions, but that the per 1 min. indicators of pulse and respiration rate remained at a higher level and fluctuated within narrower limits than in large breeds, such as the Simmenthal and Red-Steppe hybrids. The bibliography contains 19 titles. -- A. D. Musin

Card 2/2

DZAHAGOV, Kh.B.

Variations in the energy metabolism of lactating highland cows under mountain conditions. Opyt izuch.reg.fiziol.funk. 4:14-20 '58. (MIRA 12:4)

1. Laboratoriya fiziologii sel'skokhozyaystvennykh zhivotnykh (zaveduyushchiy - prof. I.A. Baryshnikov) Instituta fiziologii imeni I.P. Pavlova AN SSSR.
(COWS)
(METABOLISM)
(LACTATION)

DZANASHVILI, G. F.

Modernization of the MR-15 semiautomatic hydraulic copying lathe for securing an intermittent conveyance of the carriage. Stan. i instr. 35 no.5:28-30 My '64. (MIRA 17:7)

DZANASHVILI, G.F.; KHARCHEVNIKOV, N.Ye.

Diamond grinding of chip-breaking holes. Stan. i instru. 36 no.1:37-38 Ja '65. (MIRA 18:4)

DZANASHVILI, G.P., inzh.

Intermittent cutting on semiautomatic multiple-spindle lathes for chip breaking. Vest. mashinostr. 45 no.7:72-73 Jl '65. (MIRA 18:10)

DZANGURAZOV, F.Kh.

Subtropical fruits of the Tupolang River basin(western Gissar Range).
Izv. Otd. est. nauk AN Tadzh.SSR 18:89-100 '57. (MIRA 11:8)

1. Tashkentskiy sel'skokhozyaystvennyy institut.
(Gissar Range--Fruit)

COUNTRY : [illegible]
CATEGORY : Chemical Technology. Chemical Products and Their Uses. Part 4. Leather. Furs. Gelatin.*
ABS. JOUR. : RZKhim., No. 1 1960, No. 3427

AUTHOR : Darnie, H.
INST. :
TITLE : Oak Galls and Possibilities of Their Industrial Utilization

ORIG. PUB. : Kozn. i obuva, 1959, 8, No 3, 89-91

ABSTRACT : It is possible to collect about 500 tons of oak galls (OG) per year in Bourla. The average content of tanning in OG is 20%. The tanning substances are extracted from intact OG at a temperature of ~70°. The good quality of the obtained extract is ~60. A test tanning by the extract from OG with a slight

*Tanning Agents. Industrial Products

CARD: 1/2

DZANTIYEV, B. G.

PA 11/49T16

USSR/Chemistry - Radioactivity, of Iodine Aug 48
Chemistry - Iodine, Isotopes of, Radio Activity of

"Radioactive Isotopes of Iodine," B. G. Dzantiyev, M. B. Neyman, 11½ pp

"Uspekhi Fiz Nauk" Vol XXXV, No 2

Describes method of preparing iodine isotopes which can be used by any laboratory with a (Ra-Be) or (Rn-Be) neutron source. Table shows conditions for obtaining optimum quantity of isotope desired. Discusses formation of radioactive isotopes of xenon during decomposition of I^{133} and I^{135}.

11/49T16

USSR/Nuclear Physics Jul 49
Radioactive Isotopes

PA 64/49T108

"Radioactive Isotopes of Phosphorus," B. G. Dzanmiyev, M. B. Neyman, 39 pp

"Uspekhi Fiz Nauk" Vol XXXVIII, No 3

Discusses the isotope P^{32} and its various nuclear reactions such as S^{32}_{16} (n,p) P^{32}_{15}, Cl^{35}_{17} (n,alpha), S^{32}_{15}, P^{31}_{15} (n,gamma) P^{32}_{15}, P^{31}_{15} (d,p) P^{32}_{15}, S^{34}_{16} (d,alpha) P^{32}_{15}, and Si^{29}_{14}(alpha,p) P^{32}_{15}; the isolation of P^{32} from CS_2 targets; the dependence of the output of P^{32} upon the energy of neutrons; determining the period of half-decay; the isotope P^{30} and its production by various nuclear reactions such as Al^{27}_{13} (alpha,n) P^{30}_{15}, Si^{30}_{14} (p,n) P^{30}_{15}, Si^{28}_{14} (He^3_2,p) P^{30}_{15}, P^{31}_{15} (n,2n) P^{30}_{15}, P^{13}_{15} (gamma, n) P^{30}_{15}, S^{32}_{16} (d,alpha) P^{30}_{15}, and S^{32}_{16} (n,2np) P^{30}_{15}; the dependence of the yield of P^{30} upon the energy of alpha-particles; the obtaining of P^{30} from Si, from the stable P isotope, from S; the period of half-decay of P^{30} and the beta-spectrum of P^{30}; the isotopes P^{29} and P^{34}; with a large foreign and Russian bibliography.

DZANMIYEV, B. G.

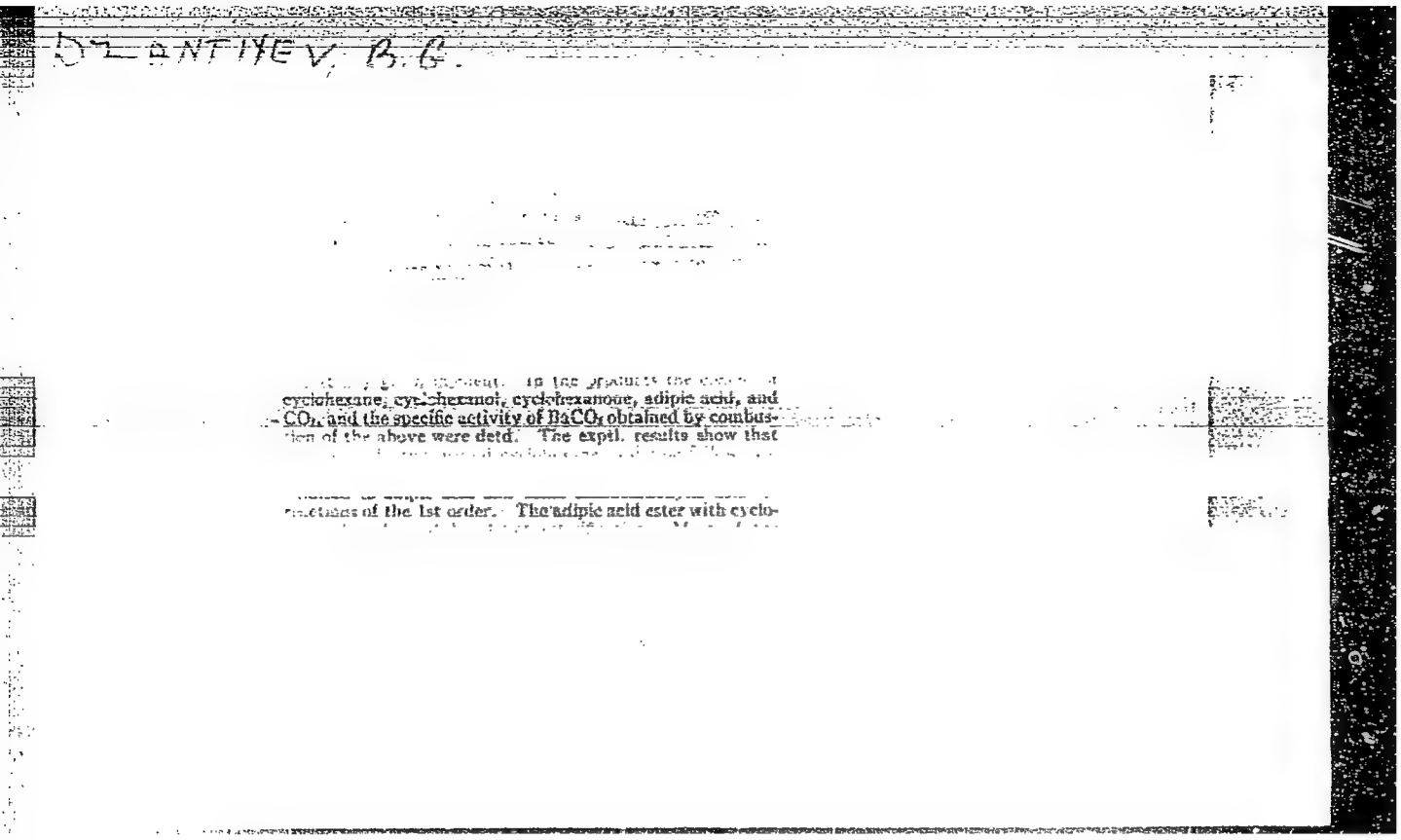
64/49T108

DZANTIYEV, B.G.

J. of the Iron & Steel Inst.
Feb. 1954
Protective Coatings

(3) Met

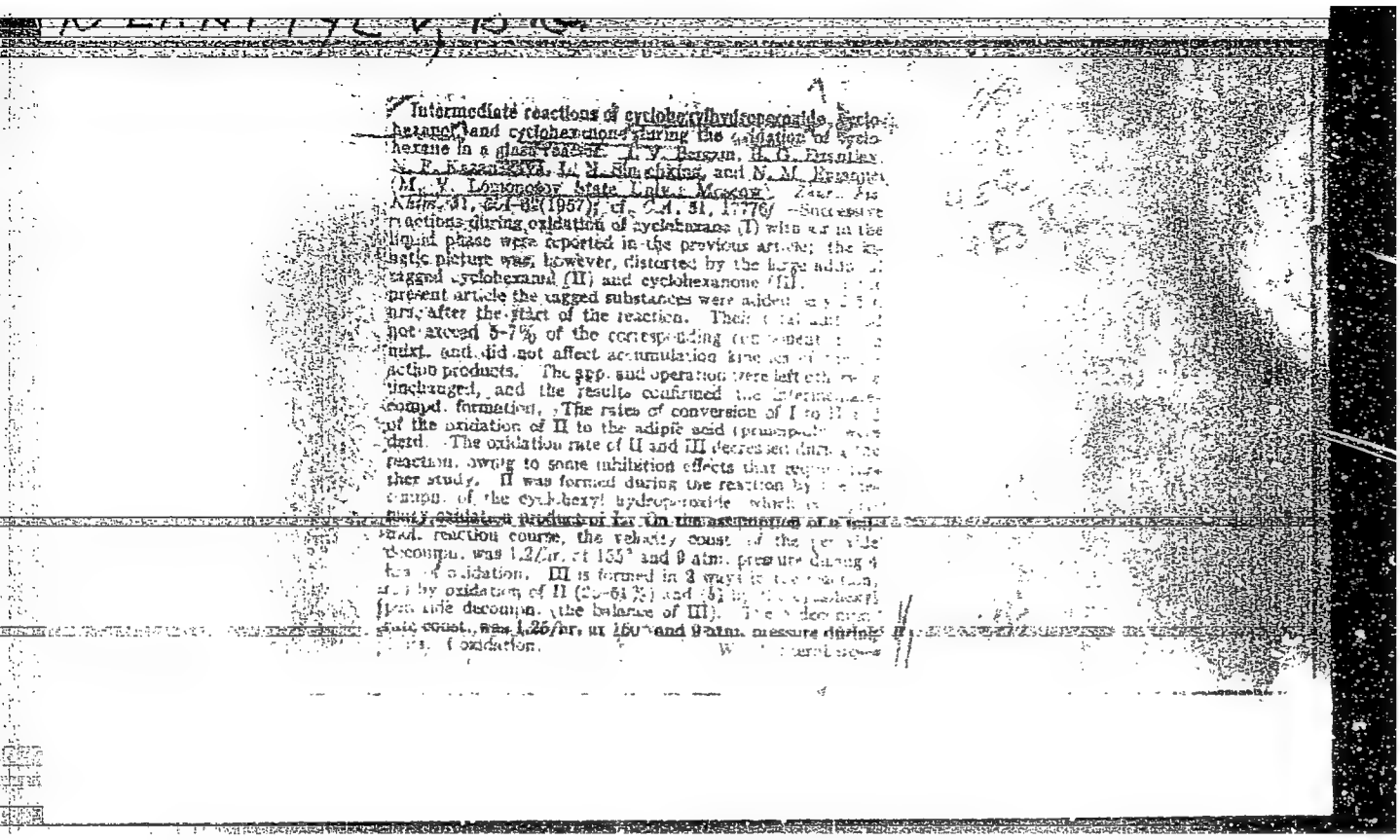
The Diffusion of Iron in Nickel. M. B. Neimark, A. Ye. Chinyaev, and B. G. Dzantiev. *Doklady Akademii Nauk S.S.S.R.*, 1953, 91, (2), 265–267. [In Russian]. The diffusion of iron in nickel in the temperature range 950–1130° C. was studied using radioactive Fe_{55}. Thin nickel foil was plated on one side with iron containing radioactive Fe_{55}, placed in a silica vessel and heated *in vacuo* to a given temperature. The rate of diffusion was followed by measurements of the radioactivity on both sides of the foil. The temperature dependence of the diffusion coefficient of iron in nickel and the activation energy were determined. The velocity of the diffusion of iron into nickel is considerably higher than that of nickel into iron.—v. o.



DZ ANTIYEV, B.G.

cyclohexane, cyclohexanol, cyclohexanone, adipic acid, and CO_2, and the specific activity of $BaCO_3$ obtained by combustion of the above were detd. The expt. results show that

reactions of the 1st order. The adipic acid ester with cyclo-



Intermediate reactions of cyclohexylhydroperoxide, cyclohexanol and cyclohexanone during the oxidation of cyclohexane in a glass reactor. I. V. Berezin, E. G. Bratoliubova-Tsvetkova, L. L. Shchukina, and N. M. Emanuel' (M. V. Lomonosov State Univ., Moscow). Zhur. Fiz. Khim. 31, 651-65 (1957). cf. C.A. 51, 17776f. Successive reactions during oxidation of cyclohexane (I) with air in the liquid phase were reported in the previous article; the kinetic picture was, however, distorted by the large admixt. of the ragged cyclohexanol (II) and cyclohexanone (III). In the present article the ragged substances were added to the mixt. only after the start of the reaction. Their concn. did not exceed 5-7% of the corresponding (component) concn. in the mixt. and did not affect accumulation kinetics of the reaction products. The app. and operation were left unchanged, and the results confirmed the intermediate compd. formation. The rates of conversion of I to II and of the oxidation of II to the adipic acid (principal product) were detd. The oxidation rate of II and III decreased during the reaction, owing to some inhibition effects that require further study. II was formed during the reaction by the decomp. of the cyclohexyl hydroperoxide which is the first oxidation product of I. On the assumption of a first-order reaction course, the velocity const. of the peroxide decomp. was 1.2/hr. at 155° and 9 atm. pressure during the period of oxidation. III is formed in 3 ways: in the reaction, and by oxidation of II (20-61%) and (2) by the cyclohexyl hydroperoxide decomp. (the balance of III). The decomp. velocity const. was 1.26/hr. at 160° and 9 atm. measure during the period of oxidation.

AUTHOR DZANTIYEV B.G., LEVKOVSKIY V.N., MALIYEVSKIY A.D., PA - 3136

TITLE The (n,α) -Reactions of 14 -MeV Neutrons With Cadmium.
(Reaktsii (n,α) 14 MeV neytronov s kadmiyem -Russian)

PERIODICAL Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 3, pp 537-540 (U.S.S.R.)
Received 6/1957 Reviewed 7/1957

ABSTRACT The present paper investigates the (n,α) -reactions on cadmium, in which palladium isotopes are created. Parallel hereto the cross section of the production of Pd^{109} from silver was determined by means of a (n,p)-reaction. Because of the many stable cadmium isotopes the products created on the occasion of the reactions could be identified only by means of the radiochemical method.

Realization of the reactions Cd(n,α)Pd and identification of the products of the reactions: Metallic cadmium or its salts were irradiated with ~4 MeV (d,d) -neutrons, 14 MeV (t,d) -neutrons and fission neutrons. The radioactive palladium was precipitated from the targets by a precipitation of dimethyl glyoxime in an acid medium. The activity of the thus obtained radiochemical pure samples was measured by means of a GEIGER counter, or these samples were dissolved. From this solution, silver (AgCl) was segregated within fixed time intervals for the purpose of identifying the palladium isotope on the basis of the daughter products. On the occasion of irradiation with 4 MeV neutrons no radioactivity was observed in the palladium fraction. In the case of irradiation with fission neutrons an activity of the palladium with T = 14 hours was observed. In the case of irradiation with

Card 1/2

The (n,α) Reactions of 14 MeV Neutrons With Cadmium. PA - 3136

14 MeV neutrons radioactive components with halfvalue periods (22± 1) minutes, (5,5± 0,2) hours and (14,0± 0,5) hours were found to exist in the palladium fraction 3. The ratio of the initial activities of these components amounts to (26,4 ± 0,8):(0,41 ± 0,04): 1,0. A table shows the results of the graphical analysis of the decay curves of the cadmium samples which were separated by the different cadmium targets. These results are then discussed in detail.
Measuring of the cross sections of the reactions $Cd^{113}(n,\alpha)Pd^{109}$, $Cd^{114}(n,\alpha)Pd^{111}$, $Cd^{114}(n,\alpha)Pd^{111*}$ and $Ag^{109}(n,p)Pd^{109}$ as well as of the reactions with 14 MeV neutrons. All necessary activities were measured by means of a GEIGER counter at equal geometrical conditions. The cross sections thus computed and the standard deviations are shown together in a table.
(4 ill. and 5 tables)

ASSOCIATION Chemical-Physical Institute of the Academy of Science of the U.S.S.R.
PRESENTED BY KONDRAT'YEV V.N., Member of the Academy
SUBMITTED 20.11.1956
AVAILABLE Library of Congress
Card 2/2

20-4-14/61

AUTHOR: DZANTIYEV, B.G., LEVKOVSKIY, V.N., MALIYEVSKIY, A.D., SERDOBOV, M.V.

TITLE: The Isomer Pd^{111} *.

(Izomer Pd^{111*}. Russian).

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 4, pp 773 - 776 (U.S.S.R.)

ABSTRACT: First of all the authors give some information on relevant preliminary papers. It is the aim of the paper under review to demonstrate unambiguously that the 5.5-hours palladium activity belongs to a certain isotope or isomer of the palladium. For this purpose, experiments were carried out with regard to the radiochemical separation of isomers in the mixture of the radioactive isotopes of palladium which are produced at the reactions Cd(n,α) and Pd(n,γ). The method of the chemical separation of the nuclear isomers is based on the Szilard-Chalmers phenomenon. When working on the methods for the separation of the palladium isomers, the authors of the paper under review tried reagents: dimethyl glyoxime, acetoxime, salicylic aldoxime and α-nitroso-β-naphthol. The best results were obtained with salicylic aldoxime. Salicylic aldoxime is suited for the separation of the nuclear isomers of palladium.

The Separation of the Isomers Pd^{111*} and Pd^{111} Produced at the Reaction $Cd^{114}(n,\alpha)$ Pd^{111}.

Card 1/3

The Isomer Pd^{111*}.

During a period of 4 hours, 400 g of cadmium nitrate were exposed to radiation of a current of neutrons of 14 MeV ($\sim 10^7$ neutrons/cm^2/sec.). The experimental arrangements are discussed. In the mixture of the radioactive palladium isotopes produced at the reactions Cd(n,α) Pd there is contained the isomer Pd^{111*} which is genetically connected with Pd^{111} (T=22 min.).

The Identification of the Pd^{111*} (T=5.5 hours) in the Mixture of the Radioactive Palladium Isotopes which were produced at the reactions Pd(n,γ): The corresponding experiment, described in the paper under review proved the production of Pd^{111*} with T=5.5 hours after the reaction Pd(n,γ), and also its genetic composition as Pd^{111} (T=22 min) and Ag^{111} (T=7.5 days). For the coefficiant of the internal conversion the value $\alpha = a/b \geq 0.185$ was obtained. Taking into consideration the given decay scheme $Pd^{111*} \rightarrow Pd^{111}$ we have $\alpha \geq 0.185 : 0.75 = 0.25$.

The determination of the relative yield of the Pd^{111} and of the Pd^{111*} at the reaction (n,γ): done by a study of the relevant kinetics of the accumulation of the radioactive silver in the samples of the palladium exposed to radiation (4 reproductions, 3 charts).

Card 2/3

20-4-14/61

The Isomer Pd^{111*}.

ASSOCIATION: Institute of Chemical Physics, Academy of Sciences of the USSR.
PRESENTED BY:
SUBMITTED: 2e November 1956
AVAILABLE: Library of Congress

Card 3/3

DZANTIYEV, B.G.

109-3-18/23

AUTHORS: Dzantiyev, B.G., Miller, V.B. and Nikonov, B.P.

TITLE: Evaporation of Barium and Strontium Oxides from an Oxide Cathode (Isparenlye okislov bariya i strontsiya s oksidnogo katoda)

PERIODICAL: Radiotekhnika i Elektronika, 1958, Vol.III, No.3, pp. 431 - 433 (USSR).

ABSTRACT: The investigated cathodes were coated with the double carbonate containing radio-active traces Ba^{140} and Sr^{89}. The carbonates were deposited on to the cores of electrolytic nickel by spraying and had a thickness of 100 μ. The active surface had an area of 0.2 cm^2. The investigation was carried out at various cathode temperatures (745 - 1 300 °C), at various anode current densities (up to 2.2 A/cm^2) and over varying periods of operation. The relationship between the evaporation of the oxides and the current density is shown in Fig.1, where the abscissae represent the current density and the co-ordinates give the amount of the evaporated oxides in %. The percentage of the evaporated oxides as a function of time is given in Fig.2; the curves were taken at a temperature of 1 040 °C and at a current density of 0.75 A/cm^2. Fig. 3 shows the amount of the evaporated oxides as a function of the cathode temperature; the curves were taken after a 20-hour operation of the cathodes

Card1/2

from which no current was drawn. From the above figures, it is seen that the evaporation of barium is more intense than that of strontium. Thus, at a temperature of 1 200 °C, nearly 90% of barium and only 10% of strontium is evaporated after a 20-hour operation. The authors express their thanks to Professor M.B. Neyman and B.M. Tsarov for their help and discussions. There are 3 figures and 5 references, 1 of which is Russian.

SUBMITTED: May 31, 1957

AVAILABLE: Library of Congress

Card 2/2

21(8) 5(0)

AUTHOR: Lapitskiy, A.V. SOV/55-59-5-29/32

TITLE: The First All-Union Conference of Universities and Colleges on Radiochemistry

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya matematiki, mekhaniki, astronomii, fiziki, khimii, 1959, Nr 5, pp 221-223 (USSR)

ABSTRACT: This conference was convened by the initiative of the laboratoriya radiokhimii khimicheskogo fakul'teta MGU (Laboratory of Radiochemistry of the Department of Chemistry of Moscow State University) and was held in Moscow from April 20 to April 25, 1959. It was attended by professors, teachers, and scientific collaborators of 32 universities and colleges of the Soviet Union. In his opening address, An.N.Nesmeyanov, Doctor of Chemical Sciences, stressed the importance of radiochemistry. 30 lectures were delivered by members of Moscow State University: Laboratoriya yadernoy fiziki (Laboratory of Nuclear Physics): N.P.Rudenko, A.K.Sevast'yanov: Production of Beryllium-7 by the Reaction (p,2n); I.Stary, N.P.Rudenko: Production of Radioactive Isotopes by Extraction as β-Diketonates. Laboratoriya radiokhimii (Laboratory of Radiochemistry): An.N. Nesmeyanov, B.N. Korolev, L.A.Sazonov: Separation of Radioactive Isotopes in the Irradiation of Colloids; An.N.Nesmeyanov, Yu.A.Borisov, E.S.Filatov, V.Kondratenko, Chzhan Tszeyuan, K.Panek, B.Shukla: Secondary Reactions of the Recoil Atoms ^{80}Br and ^{82}Br in Methyl Bromides; B.G.Dzantiyev, I.M.Barkalov, V.V.Khrapov: Reactions of "Hot" Sulfur- and Nitrogen Atoms With Hydrocarbons; B.Z.Iofa, L.V.Bobrov, A.N.Ratov: The State of Radioactive Isotopes in Extremely Dilute Solutions; M.S. Merkulova, I.V.Mel'chakov: General Theory of the Coprecipitation of Radioactive Elements With Non-isomorphous Crystalline Precipitates; A.V.Lapitskiy, I.A.Savich, Chzhuan Yu-uy: Coprecipitation of Protactinium With Complex Compounds of Ti, Nb, and Ta; V.M.Fedoseyev, V.V.Ivanenkov, V.N.Bakhvalov: Application of Radioactive Paper Chromatography"; K.B. Zaborenko, A.M.Babeshkin, M.S.Aulichenko: Accumulation and Separation of Recoil Atoms on the Basis of the Example Ra^{224} and Ra^{220}; K.B.Zaborenko, A.M.Babeshkin, V.A.Beyevskaya,

Card 1/4

L.L.Melikhov: Application of the Emanation Method for the Investigation of the Transformation of Solids; V.I.Spitsyn, K.B.Zaborenko, A.M.Babeshkin, M.A.Radicheva: Transformation of Heteropoly-compounds; K.B.Zaborenko, A.M.Babeshkin, I.V. Kovalenko: Geochemistry of Radium; K.B.Zaborenko, V.I. Korshkov. Microanalytical Determination of Uranium by Means of Nuclear Emulsions. An.N.Nesmeyanov, De Dyk-Man: Partial Vapor Pressure of Co in Alloys With Ni; Yu.A.Priselkov, Yu.A. Sapozhnikov, A.V.Tseplyayeva, V.V.Karelin: The Behavior of a Molecular Metal Beam in the High-frequency Field; I.V.Golubtsov, A.V.Lapitskiy, V.K.Shiryayev: Vapor Pressure of Niobium Dioxide; I.V.Golubtsov, Yu.A.Lisnachev, Ye.K.Bakov: Various Constructions of the Scintillation Attachment to the Apparatus of the Type B. Kafedra analiticheskoy khimii (Chair of Analytical Chemistry): I.P.Alimarin, N.P.Borzenkova: Niobium^{95} as a Radioactive Tracer; I.P.Alimarin, T.A.Belyavskaya, Mu Bin-ven': Sorption of Zr by Ion Exchangers; A.I.Busev, V.M. Byr'ko: The Use of Complex Pyrazolanidithiocarbamates in Radiometry. Kafedra neorganicheskoy khimii (Chair of Inorganic Chemistry): Ye.A.Ippolitova, Yu.P.Simanov, L.M.Kovba, G.P. Polunina, I.A.Sereshkina: Uranates of Some Bivalent Metals;

Card 2/4

V.G.Knyazina, O.G. Nerkova: Uranium Compounds With Acids of Low-valence P; V.I. Spitsyn: The Influence of the Radioactive Radiation of Solids on Their Physico-chemical Properties; I.Ye.Mikhaylenko, V.I.Spitsyn: Isotope Exchange in the System $K_2SO_4 - SO_3$ at High Temperature Kafedra khimicheskoy kinetiki (Chair of Chemical Kinetics): I.V.Berezin, V.L.Antonovskiy, N.F.Kazanskaya: Application of Tritium for the Purpose of Determining the Velocity Constants of the Separation of Organo-hydrogen Compounds. An.N.Nesmeyanov delivered a detailed lecture on the Methodology of Radiochemical Instruction at the chemical departments of universities.

Card 3/4

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S/882/62/000/002/060/100
A059/A126

AUTHORS: Barkalov, I.M., Gol'danskiy, V.I., Dzantiyev, B.G.

TITLE: A method of crosslinking polymer substances

SOURCE: Sbornik izobreteniy; plastmassy i sinteticheskiye smoly. no. 2. Kom. po delam izobr. i otkrytiy. Moscow, TsBTI, 1962, 33 [Author's certificate no. 129015, Cl. 39b, 22_{01} (appl. no. 635486 of August 1, 1959)]

TEXT: The treatment of polymer surfaces to be crosslinked with solutions of boron or lithium compounds, e.g., in methyl alcohol, is suggested prior to neutron irradiation. The surfaces to be crosslinked are treated with these solutions, tightly pressed onto each other, tied up with caprone threads, and exposed to neutron irradiation. The following systems can be crosslinked, for example: Teflon-polystyrene, Teflon-organic glass, polyethylene-polystyrene, polyethylene-organic glass, polystyrene-organic glass. The suggestion increases the crosslinking efficiency, since, even with dilute solutions of boron or lithium compounds absorbing, on the whole, 1% of the slow neutrons, the surface lay-

Card 1/2

A method of crosslinking polymer substances

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A059/A126

ers of the materials to be crosslinked, which are 10 - 20 microns thick, receive a much higher dose than the whole remaining substance. The suggestion was directed to the Goskomitet SM SSSR po khimii (State Committee of the SM USSR for Chemistry) for testing.

[Abstracter's note: Essentially complete translation]

Card 2/2

5(1,3), 21(8) SOV/153-2-4-12/32

AUTHORS: Burlakova, Ye. B., Dzantiyev, B. G., Sergeyev, G. B., Emanuel', N. M.

TITLE: Radiolytical Oxidation of Fat

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1959, Vol 2, Nr 4, pp 533 - 540 (USSR)

ABSTRACT: The investigation of the kinetics and processes of fat oxidation is necessary for an economical production technology of edible and technical fats and oils as well as for the investigation of the assimilation mechanism of the fats consumed by living organisms. The oxidation reaction of fats forms a chain reaction with degenerate ramifications (Semenov, N. N., Academician, Ref 1). It has been pointed out recently (Tarusov, B. N., Refs 2,3) that the oxidation processes proceeding in the lipoprotein phase of the cell structures play an important role in radiation damage of the organism. The initiation of oxidative chain reactions can be achieved by a short effect of catalysts (initiators) at the beginning of the reaction (Refs 4,5). This phenomenon has many analogies in the developmental dynamics of radiation damages (Ref 6). Purified fresh cod-liver oil was

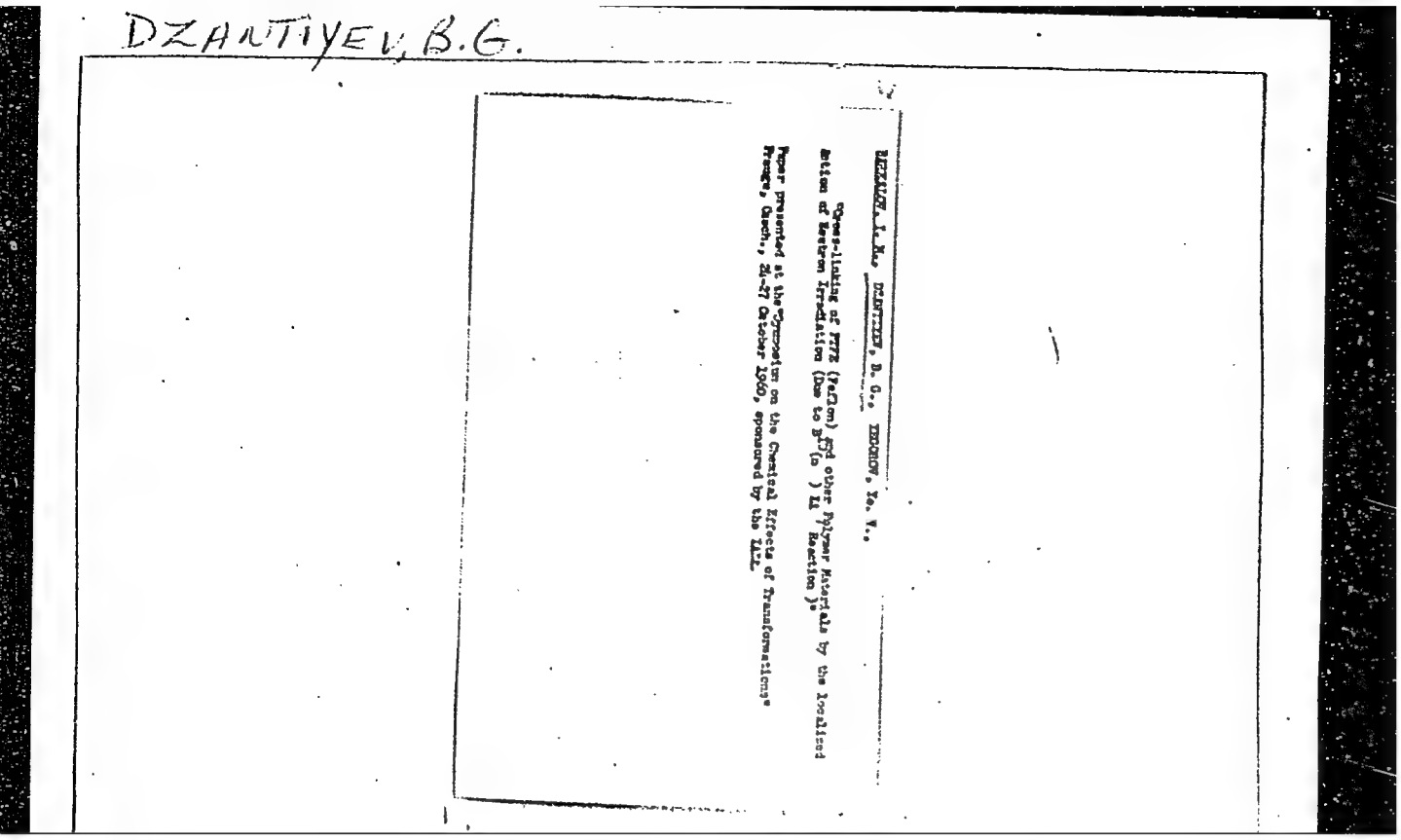
Card 1/3

chosen for the investigation. It was oxidized by means of atmospheric oxygen at 20-130° in a glass cell (Ref 7). It was irradiated with gamma rays from Co^{60} X-rays, and beta particles from P^{32} and Au^{198}. Figure 1 shows typical kinetic curves of the peroxide aggregation with thermal oxidation at 65-100°. They are characterized by an induction period which is shortened with increasing temperature: 8 hours at 65°; the period is almost entirely missing at about 100°. The curves of acid aggregation seen in figure 2 are analogous to the above curves. Acid formation, however, is somewhat retarded since acids are secondary oxidation products (Ref 9). The effect of ionizing radiations on fat containing dissolved oxygen leads to the appearance of oxidation products already at room temperature. The intensities of oxidation in the range of doses used, however, are not high ($D \approx 10^3$-10^5 p). The extent of the effect depends on the temperature at which the fat is irradiated. The yield rises with increasing temperature (Figs 3,4). This seems to be connected with the attaining of conditions favoring the chain extension (Fig 3). The authors introduce the symbol G for the value of the radiation effect. Equations are derived for G as well as for the reaction rate W. Curve 1 (Fig 5) concerning the oxidation

of irradiated and nonirradiated fat at 100° illustrates the presence of an "upper temperature limit". Above this limit the irradiation dose does no longer affect the oxidation kinetics. The effect of a previous irradiation at 20° on the formation kinetics of peroxides in fat with an oxidation at a higher temperature is analogous (Fig 6). Thus, the separation of the irradiation period and the oxidation period with respect to time only affects the duration of the induction period whereas the chemism of the process remains unchanged. The types of radiation mentioned at the beginning neither influence the kinetics nor the chemism of fat oxidation. The quantity of radiation yield depends on the temperature extreme. There are 8 figures and 11 references, 8 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M. V. Lomonosova, Kafedra khimicheskoy kinetiki (Moscow State University imeni M. V. Lomonosov, Chair of Chemical Kinetics)

SUBMITTED: May 16, 1958



DZANTIYEV, B.G.

[redacted], B. G., [redacted], Ye. V.

"Cross-linking of PTFE (Teflon) and other Polymer Materials by the Irradiation of Electron Irradiation (Due to C_nF_{2n}) II / Reaction C_nF_{2n}"

Paper presented at the Symposium on the Chemical Effects of Transformations, Prague, Czech., 24-27 October 1960, sponsored by the IAEA.

87031

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S/190/60/002/007/015/017
B020/B052

AUTHORS: Barkalov, I. M., Berlin, A. A., Gol'danskiy, V. I., Dzantiyev, B. G.

TITLE: Radiation Polymerization of Phenyl Acetylene

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 7, pp. 1103-1107

TEXT: Purpose of this paper was the investigation of kinetics and the mechanism of the radiation polymerization of phenyl acetylene which was initiated by electrons with an energy of 1.5 Mev. The irradiation was carried out in special cuvettes (Fig. 1 a). The electron beam was introduced through a plane-parallel glass window 0.5 mm thick. For accurate thermostating within the range of positive temperatures, a different type of cuvette was used (Fig. 1,b). The temperatures of the polymerization were -196 to +85°C. The reaction yield was not higher than 10 - 12%, since in all experiments the initial stage of polymerization was investigated. The radiation dose was determined by a chemical dosimeter (0.02 mole/l of

Card 1/4

Radiation Polymerization of Phenyl Acetylene

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$CuSO_4$, 0.002 mole/l of $FeSO_4$, and 0.02 n of H_2SO_4) which was recommended by the Institut im. L. Ya. Karpova (Institute imeni L. Ya. Karpov). The developing Fe^{3+} was photometrically examined by a СФ -4 (SF-4) spectrophotometer. The IR spectra of polyphenyl acetylene were studied by Yu. Sh. Moshkovskiy. The polyphenyl acetylene yield rises proportionally to the dose of wide ranges (10^7 - 10^8 roentgen) (Fig. 2). Even with the largest doses applied, no noticeable destruction of the developed polymer was observed. This seems to prove the absence of effective inhibitor additions whose presence would be indicated by the S-shape of the curve. In the presence of atmospheric oxygen, the polymer yield is increased to the 1.5- to 2-fold under otherwise equal conditions. With a certain dose, the polymer yield does not depend on its quantity, not even at temperatures near the melting point or when the liquid monomer is exposed to radiation. The dependence of the polymer yield on the quantity of the dose was also investigated (Fig. 2) at 0 and -78°C. The extremely low dependence of the polymerization rate of phenyl acetylene on the temperature is also typical. Experiments were carried out regarding the polymerization of phenyl acetylene in nonane and ethyl acetate. In these two solvents the

Radiation Polymerization of Phenyl Acetylene

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polymer yield differed widely from that expected on the basis of the additivity law (Fig. 3). A very effective radiation energy transfer (the radiation is absorbed by the solvent molecules) to the phenyl acetylene molecules is observed. Substances with structures of the polyacetylene type have the same properties as aromatic hydrocarbons, namely that of taking up the energy of ionizing radiation. The laws of phenyl acetylene polymerization in many respects are specific, sometimes even the opposite of those of the usual radical polymerization. Summing up one may say that the polyphenyl acetylene yield is approximately 8 - 9 molecules when the radiation is 100 ev. In the liquid phase, polymerization and initiation rates are proportional. The activation energy is as low as approximately 700 kcal/mole. A mechanism was suggested which explains the unusual results by the specific properties of highly conjugated products during the polymerization of phenyl acetylene. In these products a strong delocalization of unpaired elements takes place, and the reactivity of similar molecules is reduced with an increase in their length.
There are 3 figures and 6 references: 4 Soviet and 2 US.

Card 3/4

87031

Radiation Polymerization of Phenyl Acetylene

S/190/60/002/007/015/017
B020/B052

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics of the AS USSR)

SUBMITTED: March 26, 1960

Card 4/4

86322

15.8000 2109 2209

S/190/60/002/012/007/019
B017/B055

AUTHORS: Barkalov, I. M., Gol'danskiy, V. I., Dzantiyev, B. G., Yegorov, Ye. V.

TITLE: The Welding of Teflon and Other Polymeric Materials by the Localized Action of Neutron Radiation

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 12, pp. 1801-1804

TEXT: A simple process was developed for local welding of Teflon and other polymeric materials by irradiating the materials to be welded with thermal neutrons after pretreatment of the material surface with boron- and lithium compounds. The following polymeric materials were welded: Teflon - polystyrene, Teflon - polymethyl methacrylate, polystyrene - polymethyl methacrylate, polyethylene - polystyrene, polyethylene - polymethacrylate. Prior to irradiation, the surfaces to be welded were treated with solutions of boron- and lithium compounds and subsequently exposed to a thermal neutron flux from the MPT -1000 (IRT-1000) reactor. The tear resistance of the Teflon - polystyrene weld as a function of the mega-

Card 1/2

86322

The Welding of Teflon and Other Polymeric Materials by the Localized Action of Neutron Radiation

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B017/B055

roentgen dose applied to the surface, at constant B_2O_3 concentration, was investigated and the results are shown in a figure. The tear resistance of the Teflon - polystyrene weld is 120 kg/cm^2. The mechanism involved in welding polymeric materials by localized neutron irradiation is discussed. The thermal effect is assumed to be the main factor in this type of welding. Triple layer welding of polyethylene and Teflon and other polymeric and non-polymeric materials can be effected by applying interleaves of lithium- and boron-containing polystyrene films. There are 1 figure and 7 references: 5 Soviet and 2 US.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Physical Chemistry of the Academy of Sciences USSR)

SUBMITTED: May 17, 1960

Card 2/2

80661

S/153/60/003/02/09/034
B011/B003

5.3200

AUTHORS: Burlakova, Ye. B., Dzantiyev, B. G., Zefirova, A. K., Sergeyev, G. B., Emanuel', N. M.

TITLE: The Thermal and Radiolytic Oxidation of Methyl Oleate

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1960, Vol. 3, No. 2, pp. 265-271

TEXT: The authors studied the kinetics of the accumulation of products of the thermal and radiolytic oxidation of the methyl oleate by atmospheric oxygen at 50 - 120°. For this purpose a vessel was used which was analogous to that described in Ref. 10. The peroxide amount was determined iodometrically. The acids were determined by titration of the oxidate dissolved in neutral ethanol with an 0.05 N-solution of alcohol-alkali solution. An x-ray apparatus of type RUP 1-M-2, 200 kW was used as radiation source. Air was blown through at a rate of 5 - 7 l/h. The authors proved that the principal amount of the oxidation products is formed by conversion of the hydroperoxides (Refs. 1-4).

Card 1/3

The Thermal and Radiolytic Oxidation of Methyl Oleate

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B011/B003

A large amount of oxides was also found, however. The authors assume that in addition to peroxides, oxides represent primary oxidation products of the methyl oleate. Furthermore, the authors studied the decomposition kinetics of the organic peroxides in dependence on the oxidation time of the methyl oleate (Fig. 3). They determined that peroxides decompose after the reaction of second order. The constant of the decomposition rate decreases with the intensity of oxidation (Fig. 3). The authors pointed out that a short radiation effect on the oxidation process is mainly expressed by the reduction of the induction period of the peroxide-, acid-, and oxide formation. The reduction in the induction period is proportional to the radiation dose (Fig. 5) in the case of peroxides, but is independent of the radiation dose in the case of oxides. Finally, the authors proved that the amount of peroxide yield subject to radiation is largely dependent on temperature (Fig. 7). The elimination of the radiation source strongly effects the kinetics of the accumulation of peroxides at comparatively low temperatures. Above 80° this influence cannot be observed (Fig. 6). The authors thank Professor N. A. Bakh, and

Card 2/3

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The Thermal and Radiolytic Oxidation of Methyl Oleate

S/153/60/003/02/09/034
B011/B003

B. B. Sarayeva for having supplied the radiation source. There are 8 figures and 15 references, 6 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M. V. Lomonosova; Kafedra khimicheskoy kinetiki (Moscow State University imeni M. V. Lomonosov; Chair of Chemical Kinetics)

SUBMITTED: August 4, 1958

Card 3/3

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S/153/61/004/005/001/005
E134/E485

AUTHORS: Burlakova, Ye.B., Gorban', N.I., Dzantiyev, B.G., Sergeyev, G.B., Emanuel', N.M.

TITLE: The effect of gamma radiation on the oxidation of methyl oleate in the presence of inhibitors of free radical processes

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy SSSR. Khimiya i khimicheskaya tekhnologiya, v.4, no.5, 1961, 751-754

TEXT: In previous work on the radiological oxidation of natural fats (Ref.1: Izv. VUZ SSSR. Khimiya i khim. tekhnologiya, v.2, 533 (1959)), the present authors had related a reduced induction period with destruction of inhibitors by radiation. In view of the complexity of natural fats, in which the quantity and structure of antioxidants is unknown, the authors decided to study methyl oleate - inhibitor systems. Diphenylamine and hydroquinone, both known as inhibitors of free radical reactions, were employed. The authors had previously (Ref.2: Izv. VUS SSSR. Khimiya i khim. tekhnologiya, v.3, 265 (1960)) studied the effect of radiation on inhibitor free methyl oleate, and considered that radiation leading

Card 1/4

The effect of gamma radiation ..

to free radical formation would destroy the inhibitors by reaction with free radicals. Samples were exposed to gamma radiation from Cobalt 60 in apparatus ГУТ-400 (GUT-400) and the destruction of the inhibitor was followed spectrophotometrically. Irradiation took place at 20°C. Oxidation experiments on irradiated and non-irradiated methyl oleate were carried out at 80°C with continuous passage of air. Experiments with inhibitor free methyl oleate were carried out simultaneously under identical conditions to obtain the rate of free radical formation. Experimental details and methods of analysis were as described in Ref.2. Curves showing the rate of free radical formation in inhibited and non-inhibited methyl oleate were found to be parallel and differed only in their induction period. The total induction period consists of the basic induction period for the oxidation of inhibitor free methyl oleate and an additional induction period related to the concentration of inhibitor; the latter is practically completely destroyed before free peroxide radicals are observed. The additional induction period is directly proportional to inhibitor concentration, which is characteristic of inhibitors reacting with radicals. Induction periods for

The effect of gamma radiation ...

irradiated material were lower than for non-irradiated material due to inhibitor destruction, and the decrease in induction period was found to be proportional to the quantity of radiation. Curves showing the relation between inhibitor concentration and induction period, and the decrease in induction period of inhibited methyl oleate with total quantity of radiation, are given as well as correlating equations. It has been shown that quantity of radiation is controlling, and that intensity has virtually no effect. At the low temperature of radiation, the induction period of non-inhibited methyl oleate was practically unaffected by radiation. The correlation between the induction period of inhibited methyl oleate and the quantity of radiation made it possible to calculate the number of radicals formed per unit of radiation. Experiments, carried out in the presence and absence of oxygen respectively, lead to the suggestion that removal of a hydroquinone type inhibitor takes place essentially by reaction with an RO_2 type radical. There are 5 figures, 1 table and 3 Soviet-bloc references.

31744
S/153/61/004/005/001/005
E134/E485

The effect of gamma radiation ...

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova, Kafedra khimicheskoy kinetiki (Moscow State University im. M.V.Lomonosov, Department of Chemical Kinetics)

SUBMITTED: January 28, 1960

Card 4/4

43240

S/844/62/000/000/077/129
D423/D307

AUTHORS: Barkalov, I. M., Gol'danskiy, V. I., Dzantiyev, B. G. and Kuz'mina, S. S.

TITLE: Radiation polymerization of acetylenic hydrocarbons

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimii. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 455-459

TEXT: The reaction kinetics and the mechanism of polymerization of phenylacetylene, hexene and cyclohexylacetylene were studied, in both bulk and dissolved monomers, between +80 and -196°C, initiating the polymerization by 1.5 Mev electrons. For bulk polymerization, the yields increased proportionally to the dose of radiation, indicating the absence of inhibitors. Atmospheric oxygen increased the yield of the phenylacetylene polymer, but not those of hexene and cyclohexylacetylene, owing to the absence of the phenyl group in the latter 2 compounds. The rate of polymerization velocity (V) ~~is~~ directly proportional to the radiation intensity (I) and not to

Card 1/2

VI as is typical for vinyl monomers. Chain rupture is of a linear nature and is the most important feature of these reactions. The temperature dependence of V was relatively slight for all 3 monomers. Solutions in nonane and ethylacetate were also studied over a wide range of concentration; in all 3 monomers the yields of polymers differed sharply from those expected. A theory for this difference is proposed, substituting the clearly defined process of chain rupture by a single process of chain 'extinction' or 'damping', for which mathematical formulas are presented. This theory accounts for the low activation energy of radiation-induced polymerization of acetylenic hydrocarbons, and also explains the absence of any inhibiting action by oxygen. Mention is also made of the possibility of initiating the polymerization by peroxides. There are 3 figures and 1 table.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics, AS USSR)

S/844/62/000/000/097/129
D234/D307

AUTHORS: Tarasova, Z. N., Dzantiyev, B. G., Yegorov, Ye. V., Kaplunov, M. Ya., Petrova, S. B., Sobolev, V. S. and Dogadkin, B. A.

TITLE: Investigation of rubber structurization under the action of accelerated electrons

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimii. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 569-575

TEXT: Natural butadiene-styrene and carboxylate rubbers were investigated. The energy of the electrons was 0.6, 1.6 and 2 Mev. The specimens were 0.02 - 0.3 mm thick films, 60 x 60 x 1 mm plates and 10 mm thick washers. Irradiation in free state in air from an accelerator (0.2 - 0.8 megarad/sec) showed less destruction than that from a Co^{60} source in inert atmosphere. In natural rubber, destruction is much greater in the first case. In filled natural rubber it is less in the first case, in pre-vulcanized mixtures of

Card 1/2

Investigation of rubber ...

carboxylate rubber it is equal in both cases. Thermomechanical stability of electron-irradiated vulcanized rubbers was about 4 times as high as that of Co^{60} irradiated rubbers. Those of carboxyl containing rubbers show high strength and wear resistance (abrasion index = 115 cm^3/kWh for nonfilled rubbers irradiated with 24 megarad and 200 cm^3/kWh for nonfilled sulphur rubbers). Chemical relaxation curve of these rubbers shows destruction and re-grouping of salt bonds in its initial part. There are 6 figures and 2 tables.

ASSOCIATION: NII shinnoy promyshlennosti (NII of the Tire Industry); Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics, AS USSR)

Card 2/2

43243
S/844/62/000/000/104/129
D444/D307

AUTHORS: Barkalov, I. M., Gol'danskiy, V. I., Dzantiyev, B. G. and Yegorov, Ye. V.

TITLE: The welding of teflon and other polymeric materials by the localized action of neutron irradiation

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimii. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 616-620

TEXT: When ionizing radiation is used for welding polymer and other materials, its effect must be localized to avoid harmful destructive processes. The authors have developed a simple method for such localization of thermal-neutron effects: the parts to be joined are treated with compounds of boron or lithium. Boron concentration (determined photometrically) in the surface layer was 1 - 12 mg/cm^2. There is an optimum dosage for maximum strength. The welding effect cannot be due to uniform heating of the layer and is attributed to localization of the heating effect in the

Card 1/2

tracks of the strongly ionizing particles produced. The authors have patented a variant of this method, in which the surfaces to be joined have a film of polystyrene containing 1% by weight of boron, an irradiation time of 2 - 3 hours (longer times reduce strength) and doses in the film and in the bulk of the joined materials of 500 - 800 and 40 - 60 megarad, respectively, the following joint strengths (kg/cm^2) were obtained: teflon with teflon, polyethylene, aluminum and quartz, 90 - 110, 90 - 100. 120 - 130 and 80 respectively; polyethylene with polyethylene and aluminum, 130 - 140 and 110 - 135, respectively; aluminum with polymethylmethacrylate 120 - 130. There are 2 figures and 1 table.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics, AS USSR)

S/844/62/000/000/126/129
D444/D307

AUTHORS: Gudkov, B. S., Dzantiyev, B. G., Popov, V. N. and Rumyantsev, Yu. M.

TITLE: Experimental methods for radiation-chemical investigations on a nuclear reactor

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimii. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 733-737

TEXT: Among reactions suitable for effecting in a nuclear reactor to make use of the kinetic energy of the fission fragments is the fixation of nitrogen in the gas phase to form hydrocyanic acid, hydrazine and other compounds. The authors have studied such reactions using methane, ethylene or acetylene as the carbon-containing and nitrogen and ammonia as the nitrogen-containing components. An ИРТ-1000 (IRT-1000) reactor of 100 kv capacity was used by the Institut atomnoy energii AN SSSR (Atomic Energy Institute of the AS USSR) to study the reactions under flow conditions. The exit gases

Card 1/2

were analyzed after being absorbed or frozen out. The change in product yield with dosage was studied by changing the gas velocity and with composition by changing the velocity of individual components, keeping the total constant. A model of a hot cell with direct input of reagents was also studied by depositing various quantities of uranyl nitrate or boron anhydride inside the chamber. In these experiments additional cleaning of the exit gases, to remove fission fragments, was required. In some experiments the dose and yield of product were found simultaneously, thermal-neutron flux being measured with a sodium indicator. For the system C_2H_4 + NH_3 the radiation chemical yield varied from 1 to 3 molecules of HCN per 100 ev. Work on a larger scale is recommended. There are 5 figures.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics, AS USSR)

NESMEYANOV, An.N.; DZANTIYEV, B.G.; POZDEYEV, V.V.; SIMONOV, Ye.F.

Reaction of recoil atoms of tritium with benzene. Radiokhimia 4 no.1:116-122 '62. (MIRA 15:4)

(Tritium) (Benzene)

S/195/62/003/004/002/002
E075/E456

AUTHORS: Pozdeyev, V.V., Dzantiyev, B.G., Nesmeyanov, An.N.

TITLE: Utilization of hot atom reactions for the investigation of the intermolecular energy transfer processes during radiolysis of organic materials

PERIODICAL: Kinetika i kataliz, v.3, no.4, 1962, 613-614

TEXT: The cyclohexene-tolan system was investigated to assess the possibility of using hot radioactive atoms to produce labelled cyclohexene excited molecules. Study of the stabilization of such molecules in different media was expected to give information on the energy transfer from the excited to solvent molecules. Excitation and labelling of cyclohexene molecules was carried out by exchanging H atoms with a hot tritium atom. It was found that the resistance of cyclohexene to decomposition increased with the concentration of tolan in the mixture. However the increasing tolan concentration had almost no effect on the specific activity of cyclohexene. Thus for the system investigated, changes in the concentration of the aromatic component did not influence the

stabilization process of the excited molecules of cyclohexene but decreased effectively its radiolysis. Other systems must be studied to test the general applicability of the method. There are 2 figures and 1 table.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova. Khimicheskiy fakul'tet (Moscow State University imeni M.V.Lomonosov Chemical Division)

SUBMITTED: March 26, 1962

POZDEYEV, V.V.; NESMEYANOV, An.N.; DZANTIYEV, B.G.

Effect of halogen-containing additives on the reaction of tritium recoil atoms with benzene. Radiokhimia 4 no.4:398-404 '62. (MIRA 15:11)
(Tritium) (Benzene) (Iodine)

POZDEYEV, V.V.; NESMEYANOV, An.N.; DZANTIYEV, B.G.

Effect of the aggregate state on the reactions of tritium recoil atoms with hydrocarbons. Radiokhimia 4 no.4:404-410 '62. (MIRA 15:11)

(Tritium)
(Hydrocarbons)

POZDEYEV, V.V.; NESMEYANOV, An.N.; DZANTIYEV, B.G.

Tritium recoil atoms and intramolecular migration of energy. Kin.i kat. 4 no.2:318-319 Mr-Ap '63. (MIRA 16:5)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova, khimicheskiy fakul'tet.
(Benzene derivatives) (Tritium)

POZDEYEV, V.V.; NESMEYANOV, An.I.; DZANTIYEV, B.G.

Interaction of tritium recoil atoms with halo derivatives of benzene. Radiokhimiia 5 no.3:395-397 '63. (MIRA 16:10)

(Tritium) (Benzene)

DZANTIYEV, B. G.; STUKAN, R. A.; SHVEDCHIKOV, A. P.; SHISHKOV, A. V.

"The formation of polymeric products in reactions of polyvalent recoil atoms."

report presented at IAEA Symp on Chemical Effects associated with Nuclear Reactions and Radioactive Transformations, Vienna, 7-11 Dec 64.

Inst of Physical Chemistry, AS USSR.

DZANTIYEV, B.G.; SHVEDCHIKOV, A.P.

Gas-phase reactions of hot atoms of tritium with ethylene. Radiokhimiia 6 no.3:371-372 '64.

Gas-phase reactions of hot atoms of C^{14} in the ethylene - ammonia system. Radiokhimiia 6 no.3:373-375 '64.

(MIRA 18:3)

Dzantiyev, B. G.; Shvedchikov, A. P

... authors have investigated ... higher ...

... ethylene and ...

... considerably larger than the ...

... disproportionation and ...

... radiolysis of ethylene ...

... radicals $C_2H_5^*$ produced ... hydrogen

L 24759-65

ACCESSION NR: AP4049620

According to this method
separation of hydrogen from the
Orig. art. has: 3 figures and 10 equations

DZANTIYEV, B.G., SHVEDCHIKOV, A.P.; BORSHAGOVSKIY, B.V.

Formation of excited ethyl radicals when hot hydrogen atoms react with ethylene. Dokl. AN SSSR 157 no.3:653-655 Jl '64.
(MIRA 17:7)

1. Institut khimicheskoy fiziki AN SSSR. Predstavleno akademikom V.N. Kondrat'yevym.

DZANTIYEV, B.G.

International symposium on chemical effects linked with nuclear reactions and radioactive transformations. Atom. energ. 19 no.1:94-95 Jl '65.
(MIRA 18:7)

DZANTIYEV, B.G.; KISELEVA, N.N.; SHISHKOV, A.V.

Developing the methods of hot synthesis of sulfur-35 labeled biologically active substances. Part 3: Preparation of triethyleniminothiophosphoramide with a sulfur-35 and phosphorus-32 double tag. Radiokhimiia 7 no.3:366-368 '65. (MIRA 18:7)